Rugini Olive Medium
With Vitamins
Without Sucrose and Agar

Product Code: PT057

Product Description:
Rugini Olive Medium has been developed by E. Rugini in 1984 for the in vitro propagation of Olive, *Olea europaea*, family *Oleaceae*. The medium is specially used for species that are difficult to propagate in vitro. The formulation is a nutrient blend of inorganic salts, vitamins and amino acid.

Rugini Olive Medium provides all essential macroelements and microelements. Potassium nitrate and ammonium nitrate serve as sources of nitrogen. Calcium nitrate helps to maintain structural and functional integrity of cells and promotes direct organogenesis. Potassium dihydrogen phosphate and potassium chloride serve as sources of phosphate and enhance cell proliferation. Microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc play vital role in plant metabolism. Boron plays a key role in carbohydrate metabolism. Thiamine, pyridoxine, nicotinic acid act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Glycine serves as a source of amino acid. Folic acid and biotin aid in multiplication of shoots.

The product is plant tissue culture tested but it is the sole responsibility of the user to ensure the suitability of the medium for individual species.

Composition:

Ingredients | mg/L
--- | ---
**MACROELEMENTS**
Ammonium nitrate | 412.000
Calcium chloride | 332.200
Calcium nitrate | 416.920
Magnesium sulphate | 732.600
Potassium chloride | 500.000
Potassium nitrate | 1100.000
Potassium phosphate monobasic | 340.000
**MICROELEMENTS**
Boric acid | 12.400
Cobalt chloride hexahydrate | 0.025
Copper sulphate pentahydrate | 0.250
EDTA disodium salt dihydrate | 37.300
Ferrous sulphate heptahydrate | 27.800
Manganese sulphate monohydrate | 16.900
Molybdic acid (sodium salt) | 0.213
Potassium Iodide | 0.830
Zinc sulphate heptahydrate | 14.300
**VITAMINS**
D-biotin | 0.050
Folic acid | 0.500
myo-Inositol | 100.000
Nicotinic acid (free acid) | 5.000
Pyridoxine HCl | 0.500
Thiamine hydrochloride | 0.500
**AMINO ACID**
Glycine | 2.000

Total (gms/litre) | 4.1

Material required but not provided:
- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl
- Sucrose (PCT0607)
- Gelling agents like Agar (PCT0901) or CleriGel™(PCT0903)

Precautions:
- Ensure appropriate pH of the medium before addition of gelling agent as acidic pH will lead to decreased gelation resulting in semi solid flowing gel while alkaline pH will lead to formation of hardened gel.
- Use of Distilled water/Tissue culture grade water is recommended for media preparation as tap water or lower grade water may lead to salt precipitation and improper gelation.
- Avoid preparation of concentrated solutions, as it will lead to precipitation of salts.

Directions:
- Reconstitute medium by adding required quantity of
powder in two-third of total volume with constant, gentle stirring till the medium gets completely dissolved.
- Add heat stable supplements prior to autoclaving.
- Make up the final volume with distilled water.
- Adjust the pH of the medium to 5.75 ± 0.5 using 1N NaOH/HCl.
- Add gelling agent and heat the medium to boiling till complete dissolution of gelling agent.
- Sterilize the medium by autoclaving at 15 lbs and 121°C for 15 min.
- Cool the autoclaved medium to about 45°C before adding heat labile supplements.
- Aseptically dispense the desired amount of medium under a laminar airflow unit in sterile culture vessels.

**Quality Control:**

**Appearance**
White to off-white, homogenous, free flowing powder

**Solubility**
4.1 gms/litre soluble in distilled water

**Colour and Clarity**
Colourless to light yellow, clear solution

**pH at 25°C**
3.40 - 4.40

**Plant Tissue Culture Test**
The growth promoting properties of medium is assessed by providing plant cultures with relative humidity of about 60%±2%, temperature 22ºC±2ºC and photoperiod of about 16:8. The plant species showed actively growing callus and shoots with no structural, necrotic and toxic deformity.

**Storage and Shelf Life:**
- The plant tissue culture medium powder is extremely hygroscopic and must be stored at 2-8°C in air tight containers.
- Preferably, entire content of each package should be used immediately after opening.
- Use before the expiry date.

**Revision : 01 / 2017**